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FROM THE DIRECTOR

Michael Anastasio

The challenge is to commit to Lab's collective success

The range of discussions I've heard this week suggest that some employees aren't sure how they fit into the picture of the lost TESA access card and missing security keys. I've heard everything from "Why is he holding an all-hands meeting when he should be talking directly to Security?" to "What's the big deal?"

Today's column is intended to shed light on those questions and help us put this incident behind us.

My decision to hold an all-hands meeting was deliberate. The management problems that occurred in Security potentially could have occurred within any directorate. When problems arise, appropriate and prompt action is required. The all-hands meeting was to reinforce that — especially during this time of intense scrutiny. It is unrealistic to expect that no more mistakes will be made at this laboratory and they could occur anywhere. While we must make strong efforts to avoid mistakes, it is human nature and additional problems are to be expected. However, it is not the mistakes that define us; more

See **DIRECTOR**, page 8

NIF laser beams to new world records

The National Ignition Facility (NIF) recently set a world record for laser performance, producing 10.4 kiloJoules (kJ) of ultraviolet laser light in a single laser beamline. In recent weeks NIF laser scientists have also used the first four NIF beam lines to set records for infrared and green single beam laser energies with 21 kJ and 11 kJ of energy delivered, respectively.

NIF researchers focused this light into a special diagnostic system



BRYAN QUINTARD/NIF

A view inside the center of NIF's 30-foot diameter target chamber. On the left, the Target Alignment Sensor Positioner (TASPOS) is used to carefully position a tiny target the size of a BB, which can be seen at the end of the Target Positioning System (TARPOS) on the right. The green light is from the Chamber Interior Viewing System (CIVS) used to ensure safe operations and logging of movements of objects within the target chamber.

designed to provide precise measurements of laser beam quality and performance at these different frequencies.

The NIF laser system has now demonstrated ultraviolet laser energy equivalent to 2 million Joules (MJ) in 192 beams. This "full NIF equivalent" performance exceeds the design requirement of 1.8 MJ specified for NIF.

"The NIF project has demon-

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Lab is 'critical element' in homeland security

By Stephen Wampler

NEWSLINE STAFF WRITER

BURLINGAME — America's national laboratories are a critical element of the homeland security capability for the nation, a top Department of Homeland Security official said Tuesday.

But even so, the laboratories will need to team with companies to rapidly turn technologies into products, stated Mike Burns, the head of the department's Office of National Laboratories, or ONL.

"The high-tech advances need to be moved to the operational end users, such as the Port Authorities in

New York and New Jersey or the fire chief in Wichita," Burns explained.

"It's right there in the office's (of Science and Technology) mission statement that we reach out and engage private sector people."

Burns visited the Bay Area to deliver the keynote address to the Technology Partnerships Working Group, a Department of Energy multi-laboratory organization that focuses on technology transfer issues.

About 135 people from around the country attended the three-day conference, held at the Sheraton Gate-

See **HOMELAND**, page 8

Review of select business processes validates Lab practices and operations

The University of California released Thursday an independent assessment and operational analysis of select business processes at the Laboratory (LLNL) that validates the existence of appropriate internal controls.

The report, which culminates two months of observation and operation analysis by a team of up to 10 professionals from the Government Contract Services Group of Ernst & Young LLP, was conducted at the request of LLNL Director Michael Anastasio.

"The review of key business practices did not disclose any material weaknesses in Livermore's sys-

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Collaboration monitors Middle East earthquakes

By Anne M. Stark

NEWSLINE STAFF WRITER

Last year, two earthquakes with Richter magnitudes of 5.1 and 4.3 shook the United Arab Emirates and residents took note. The ground motion resulted in damage to structures and minor injuries and surprised people because earthquakes are rare for this region.

In October 2002, Lab seismologists Keith Nakanishi and Artie Rodgers traveled to the UAE to approach various universities about starting a scientific partnership to record seismic ground motion. The Geology Department of United Arab Emirates University in Al Ain welcomed the possibility for collabo-



PHOTO COURTESY OF ARTHUR RODGERS, LLNL

LLNL seismologist Arthur Rodgers, second from left, and LLNL technician J. Patrick Lewis, second from right, stand with United Arab Emirates University colleagues.

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All's fair in health and safety

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A corona achievement

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Training with class

— Insert



LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 4

Tuesday
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A representative from **Fidelity Investments** will be onsite to meet with employees today and Wednesday. Fidelity Investments are available to UC's 403(b) participants in addition to the UC-managed investment funds. If you would like to learn more about Fidelity's plans, call the Fidelity Central Reservation System at 1-800-642-7131 to set up an appointment with the Fidelity representative. When calling, be sure to specify you are an LLNL employee.

Wednesday
11

The **22nd Annual Livermore Rodeo Cattle Penning and Mixer** will be held today at the rodeo arena at Robertson Park.

Dinner will be served from 5:30 to 8:30 p.m. with cattle penning starting at 6 p.m. Music by the California Cowboys will be featured from 6 to 10 p.m. No one under 21 allowed. Tickets are \$20 and available at the Rodeo Ticket Booth inside Baughman's Western Outfitters at 2029 First St. in Livermore. For more information, call 455-1550.

Thursday
12

Karats Jewelry arrives at the LLESA Office (Bldg. 415, room 103) just in time for graduations today from 11 a.m. to 3 p.m. They

offer jewelry products that are up to 60 percent below retail. A representative from Costco also will be at the LLESA Office from 10 a.m. to 2 p.m.

Friday
13

A representative from **California Casualty Insurance** will be in the Benefits Office today.

Appointments are required and may be scheduled by calling 2-9955. California Casualty offers individual rates to Lab employees by payroll deduction for auto and homeowner/renter insurance. As with any employee-paid insurance coverage, employees are encouraged to comparison shop.



The **LLNL retirees picnic** will be held on June 18 at Ravenswood Historical Site, 2647 Arroyo Road, beginning at 11:30 a.m.

Space is limited to 150 members, and reservations are due by Friday, June 13.

The **June travel slide** show will be presented by Margaret and Jim Tracy at the Livermore Public Library meeting room starting at 2 p.m. on June 24. It is entitled "Scotland by Lochs and Locks/Edinburgh Military Tattoo."

Send items to be listed in the calendar to Anne M. Stark at stark8@llnl.gov.

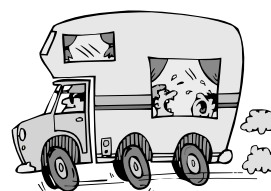
Cedar Mountain plays host to party for Ault, McKoon and Shepp

A retirement party will be held for Earl Ault, Bob McKoon and Tom Shepp from 3-7 p.m. Friday, June 20 at the Cedar Mountain Winery, 7000 Tesla Road. RSVP by Friday, June 13 to Linda Ault at 3-4378 or ault2@llnl.gov.

RETIREES' CORNER

Barbara Hill (Mechanical Engineering, 1993) attended the Livermore Police Department Citizens Police Academy every Wednesday evening for 13 weeks. Classes ranged from meeting the chaplain to range training. During range training, she fired an M-16 automatic weapon, 38 caliber and 45 caliber pistols and a 12-gauge shotgun (which, when held incorrectly, bruises your arm — and she has the picture to prove it). She enjoyed riding patrol with an officer and sitting in dispatch.

A three-hour tour of the Santa Rita Jail was interesting. Graduation was held in conjunction with the open house celebrating National Police Month. **Ron** (Mechanical Engineering, 1987) thought Barbara had so much fun and had such a unique inside look at the police department that he has applied for the fall academy. The Web address for the Livermore Police Department is: <http://www.livermorepolice.org> (community programs).



Art Krakowski (Electrical Engineering, 1993) and wife Carol continue their travels. In 2003, it will be Ashland, Oregon for the Shakespeare festival; Albuquerque, New Mexico for a "Science and Consciousness" conference; Greece with two granddaughters; Costa Rica with two other grandchildren; and the Grand Canyon for rafting and hiking.

In addition, through the Tops Program, Art has been teaching science to 4th graders by using experiments in earth science, energy, electricity, and magnetism and animal behavior. He also assists East Avenue teacher Amiee Thompson, who has an assortment of microscopes, rocks, seeds, batteries, bulbs, wire, balance scales and hundreds of other items. 2003/Sci02Tops/Sci02Tops.htm

Garith and Amy Helm spent two weeks in Hawaii in March where they enjoyed kayaking, hiking, whale-watching and relaxing in the sun. April found them on a 16-day road trip in their motor home (with

their two cats), traveling on old Route 66 through New Mexico and Arizona. The kitties enjoyed the trip almost as much as they did.

Jane (formerly **Rubert**, Mechanical Engineering, 1993) and **Gus Olson** (Engineering AD office 1993) have been extremely busy. They completed a 2.5-month house remodel and two weeks later left on a month-long vacation. They traveled by minivan with another couple along Interstate 10. They spent three days in Arizona visiting various national monuments and parks, the town of Tombstone, and going on a tour of a copper mine in Bisbee. Then it was on to San Antonio, where they went on a boat tour of the River Walk, and then toured the Alamo. They then went to New Orleans and Bourbon Street, which they did not care for. They also went to New Orleans' River Walk and Aquarium, but their most enjoyable part was a boat tour of the Bayous.

The cross-country trip was to get to Ft. Lauderdale without flying to catch a ship for a 16-day cruise. The new Coral Princess ship stopped in Curacao, Aruba, and then through the Panama Canal, which was very interesting. Then there were stops in Mexico at Huatulco, Acapulco and Cabo San Lucas before ending in San Francisco. An interesting side note: **Ariel Wente** was a guest lecturer on the ship, presenting 10 sessions about the Livermore wine country (most of which included wine tasting). They ran into some other Lab Retirees on the ship: **Ken Poar** (Mechanical Engineering) and his wife **Pat**, and **Jerry Dittman** (Mechanical Engineering). It was a very enjoyable trip, but it was a long time to be away from home.

Send input for this column to **Gus or Jane Olson**: E-mail: AugustO@aol.com, or JaneRubert@aol.com; phone: 443-4349; address: 493 Joyce Street, Livermore, Calif. 94550.

IN MEMORIAM

Lee Roy Owens

Lee Roy Owens died Tuesday, May 27, at home after a lengthy illness. He was 86.

A native of Tennessee, Owens moved his family to Oakhurst, Calif. in 1955 where he was self-employed as a carpenter. In 1958, he moved to Livermore, where he worked in Plant Engineering as a maintenance machinist. He retired in 1979 as a maintenance foreman. He enjoyed fishing, hunting, woodworking and spending time at home and on vacation with his family. Owens served in the U.S. Navy from 1943-1945 with the Seabees in the South Pacific.

Owens is survived by his wife, Virginia, of Oakland; his son, Michael, of Santa Rosa; his granddaughter Rachel, of Santa Rosa; and his son, Douglas, of Tracy.

Burial was at Chattannoga Memorial Cemetery in Chattanooga, Tenn.

Donations can be made to Oakland Kaiser Hospice at 235 West McArthur Blvd, Suite 558, Oakland, Calif. 94611.

Alexander Sigthor Goodman

Retiree Alexander Sigthor Goodman of Livermore died May 29 in Ripon, Calif. He was 84.

Born July 17, 1918 in North Dakota, Goodman served in the U.S. Army from 1942 to 1946. He was a construction superintendent at the Lab for 30 years and retired in 1980.

He was a pioneer member of the Asbury United Methodist Church of Livermore, member of Oddfellows Lodge #2009 of Livermore and

S.I.R.S. #121 of Livermore. He enjoyed fishing, woodworking (making rocking horses), astronomy and built a telescope.

Goodman is survived by his wife of 57 years, Ola Mae Goodman of Livermore; daughter, Alison Council of Ripon, Calif.; son, Steve Goodman of Livermore; a sister, Ann Stephan of Bismark, ND and four grandchildren.

Donations preferred to Breast Cancer Research, 300 Lakeside Dr., 6th floor, Oakland, CA 94612.

Newsline

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AROUND THE LAB



Department of Applied Science celebrates 40 years

By Linda Lucchetti

NEWSLINE STAFF WRITER

The University of California Davis, Department of Applied Science (DAS) commemorated 40 years of instruction at the Livermore campus, on Friday, May 30, with a reception at Hertz Hall.

The reception was followed by the first annual dinner meeting of the Applied Science Alumni Association.

Former students from the first class in 1963 and Lab scientists who taught classes were among those who joined UC and Lab employees in celebrating LLNL's unique affiliation with UC Davis. Among the students from the early classes who attended were Charles Robison, Robert Harney, Ron Koopman, Bob Kuckuck and Rich Van Konynenberg.

Director Emeritus and founder of DAS Edward Teller spoke briefly about his role in the development of the Lab campus, dubbed "Teller Tech." It was in the early 60's that Teller envisioned a university-level educational facility in Livermore, adjacent to the Lab site. With 91 students enrolled, the first classes began in the Fall of 1963, in a small trailer on the Lab's main site. In 1977, the department moved to its current location, Hertz Hall, at the Lab's East Gate.

"Why start DAS in Livermore?" Teller began. "Because the United States is not short on good science or good engineering, but is lack-



FRANK NUNES/IBIS

Left: Frederick Wooten, past chair of the Department of Applied Science, chronicled the early history and key people of the Department. Below: Director Emeritus and founder of DAS Edward Teller, also spoke at Friday's celebration.



ing something in between. DAS is a way to enhance the application of new discoveries. The Lab allows opportunities for new ideas."

Teller went on to say that although he hopes to be credited for his early lectures at the DAS campus, he would most want to be remembered for his method of interviewing prospective students who applied to DAS. He said he often asks questions "not to find out what a student knows, but rather what a student wants to know, and wants to accomplish."

Along with Teller, speakers at the event included Applied Science Chairman and Edward Teller Professor Richard Freeman, past chair Pro-

fessor Emeritus Frederick Wooten, John Holzrichter, Professor Emeritus Richard Christensen who spoke for past chair, Professor Neville C. Luhmann, Jr. and Hertz Foundation Director.

'Brotherhood of the Bomb' author discusses Laboratory's founding

Gregg Herken knows just as much about the Laboratory as any longtime employee. He may know even more. Herken, curator, historian and professor, is the author of "Brotherhood of the Bomb," a look at J. Robert Oppenheimer, Ernest O. Lawrence and Edward Teller, three of the founding fathers of nuclear weapons.

Herken will discuss E.O. Lawrence and the origins of the Lab during the next Director's Distinguished Lecturer Series, at 3:30 p.m. Thursday, June 12, in the Bldg. 543 auditorium. Director Michael Anastasio invites all employees to attend.

Herken's talk, "An Additional and Broad Effort: E.O. Lawrence and the Origins of the Livermore Lab," will provide a snapshot of his "Brotherhood of the Bomb," which was released last September to favorable reviews. Herken had set about writing a history of Los Alamos and Lawrence Livermore national labs, but during his research he became so interested in Oppenheimer, Lawrence and Teller that he changed his book's focus.

The book explores the relationship between the three as they traverse political and scientific landscapes. As Herken puts it in the book's opening pages, "like 'The Sorcerer's Apprentice,' (the book is) a cautionary tale of arrogance, betrayal, and



Gregg Herken

unforeseen consequences; of what comes from invoking forces — both political and physical — that one neither fully understands nor controls."

While Herken's book confirms E.O. Lawrence as both the happy-go-lucky apolitical physicist and right-wing ideologue of popular imagination, he also shows Lawrence to be more complex, conflicted, and a far more interesting figure than previously documented. That complexity — and that conflict — will be discussed in detail during Herken's DDLs presentation.

Herken is the historian and curator of military space at the National Air and Space Museum of the Smithsonian Institution in Washington, D.C. Before joining the Smithsonian in 1988, Herken taught recent American history and the history of American foreign policy at the University of California, Oberlin College, Yale University, and Caltech. He is the author of four books: "The Winning Weapon: The Atomic Bomb in the Cold War," "Counsels of War," "Cardinal Choices: Presidential Science Advising From the Atomic Bomb to SDI," and "Brotherhood of the Bomb: The Tangled Lives and Loyalties of Robert Oppenheimer, Ernest Lawrence, and Edward Teller."

Herken received a Ph.D. in modern American diplomatic history from Princeton University in 1974. After teaching for 14 years, he joined the permanent research staff of the Smithsonian. In 1991, he received a MacArthur research and writing grant for "Brotherhood of the Bomb." From 1994-95, he was a senior research and policy analyst to the President's Advisory Committee on Human Radiation Experiments, at the request of the Department of Energy, a result of the discoveries made researching the book.

While at the Air and Space Museum, Herken served as one of the organizers of a MacArthur-funded symposium series, "The Legacy of Strategic Bombing," and was chief curator of "Trust but Verify," an exhibit on the 1987 Intermediate-range Nuclear Forces (INF) Treaty that opened at the museum in June 1990. Between 1988-96, he served as chairman of the Department of Space History, as well as supervising curator for the exhibit, "Space Race," which opened in 1997.

In July 2003, Gregg Herken will join the founding faculty of the new University of California campus at Merced.

Herken's talk will be Webcast live at rtsp://paramount.llnl.gov:558/encoder/LabTV.rm (available 30 minutes prior to broadcast).

A reception will be held in the lobby area outside the auditorium following the talk.

The talk will be rebroadcast on Lab TV Channel 2 on Thursday, June 19, at 10 a.m., noon, 2, 4, and 8 p.m. and Friday, June 20 at 4 a.m.



NEWS YOU CAN USE

Students get measure of Lab



JACQUELINE MCBRIDE/NEWSLINE

Eight students from Alabama A & M University, Morehouse College, South Carolina State University and Florida A & M University measure spectra at the Laboratory's Electron Beam Ion Trap (EBIT) facility in Bldg. 194. The students are participating in a two-week workshop as part of a NASA-sponsored program called "Minority University Education and Research Partnership Initiative in Space Science." The LLNL Research Collaborations Program for Historically Black Colleges and Universities and Minority Institutions also contributed to the workshop. The Lab's principal investigator Peter Beiersdorfer said the program exposes the students to astrophysical observations, atomic physics, data analysis, experimental techniques and to Laboratory astrophysics facilities. "As part of the program, the Lab is partnering with minority universities to promote astrophysics," Beiersdorfer said. "We're helping to train future scientists who can help in the space science program."

Jobs Web page redesigned for quicker, easier access

Incorporating user input and usability design concepts, a redesigned Jobs Home Page has been released at <http://jobs.llnl.gov>. The changes will enable quicker and easier access to job opportunities.

Additional enhancements will be released in the future that will benefit both applicants and other personnel involved in the hiring process.

Other significant milestones met to date for the second phase of the project include:

- Process developed to enable LLNL Web masters to build custom search pages linking to LHire posted jobs.
- Standardized posting templates developed for 400 series jobs; a pilot with one Directorate has started to test templates.
- Testing started on the Offer to Start component, which will ultimately result in the elimination of the 6440 form; next steps include piloting new processes with one directorate prior to Laboratory-wide release in the September time frame.
- Requirements documentation phase kicked-off to enable PeopleSoft's electronic routing and approval capability. Testing is scheduled for September/October.

Standard reports have been written to track recruiting data and are now being tested within HR.

Additional PeopleSoft applicant screening functionality has been demonstrated and future implementation benefits are now being assessed.

The LHire Project team welcomes your feedback and questions at: LHire4help@llnl.gov. This link is also available at the bottom of the Jobs Home Page.

Technical Meeting Calendar

Friday 6
PHYSICS & ADVANCED TECHNOLOGIES
"The Origin of the Interstellar Medium in Early-type Galaxies," by Alex Athey, University of Michigan. Noon, Bldg. 319, room 205 (uncleared area). Refreshments will be served. Contacts: Michael Gregg, 3-8946, or Josie Morgado, 3-4188.

ASCI INSTITUTE FOR TERASCALE SIMULATION TECHNOLOGY
"Modeling Climate and Future Climate Change," by Warren Washington, National Center for Atmospheric Research. 10:30 a.m., Bldg. 543 auditorium (uncleared area). Contact: Linda Bodtker, 3-0421.

INERTIAL CONFINEMENT FUSION
"Physics of Laser Driven Relativistic Plasmas Energetic X-rays, Proton Beams and Electron Transport in Petawatt Laser Experiments," by Richard A. Snavely. 10 a.m., Bldg. 481, room 1000 (uncleared area). Contact: Bruce Remington, 3-2712, or Louann Arredondo, 2-6710.

Tuesday 10
PHYSICS & ADVANCED TECHNOLOGIES
Post Doctoral Program Forum: "Magnesium Diboride Point-contact Junctions," by S. Darin Kinion, 1:30 p.m., Bldg. 2128, room 1000 (uncleared area). Contact: Andrew J. Williamson, 2-8285.

PHYSICS & ADVANCED TECHNOLOGIES
"Hot Dense Capsule Implosion Cores Produced by Z-Pinch Dynamic Hohlraum Radiation," by James E. Bailey, Sandia National Laboratories, Albuquerque. 2 p.m., Bldg. 2128, room 1000 (uncleared area). Contact: Alan J. Wootton, 2-6533.

LIVERMORE COMPUTING
LC customers monthly meeting. 10 a.m., Bldg. 451, White Room (uncleared area). Contact: taf@mail-llc.llnl.gov.

ENGINEERING CENTER FOR NONDESTRUCTIVE CHARACTERIZATION
"Summary of Recent Developments in Ballistic Damage Assessment Using XCT," by Joe Wells, JMW Associates. 1:30 p.m., Bldg. 155, room 1101 (uncleared area). Contact: Ann Tyler, tyler8@llnl.gov.

Wednesday 11
INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"The Mathematica Platform," by Andrew de Laix, Wolfram Research, Inc. 1:30 p.m., Bldg. 451, room 1025 (uncleared area). Contacts: James McGraw (ISCR), 2-0541, or Linda Bodtker, 3-0421.

Thursday 12
DIRECTOR'S DISTINGUISHED LECTURER SERIES
"An Additional and Broad Effort: E.O. Lawrence and the Origins of

the Livermore Lab," by Gregg Herken, Smithsonian curator and historian. 3:30 p.m., Bldg. 543 auditorium (uncleared area). A reception will be held in the lobby area outside the auditorium following the talk. Director Michael Anastasio invites all employees to attend.

RADIATION DETECTION CENTER
"The Majorana Experiment, a Straightforward Neutrino Mass Experiment Using the Double-Beta Decay of ⁷⁶Ge," by Harry S. Miley, Pacific Northwest National Laboratory. 11 a.m., Bldg. 151, room 1107 (uncleared area). Contact: Ron Wurtz, 3-8504, or Christie Shannon, 3-6683.

Thursday 19
CENTER FOR GLOBAL SECURITY RESEARCH
"Russian Military Policy and Military Reform," by Alexander Golts, *Ezhedelnyi zhurnal*. 10 a.m., Bldg. 170, room 1091 (uncleared area). Contact: Tami Alberto, 2-5969.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to tmc-submit@llnl.gov. For information on electronic mail or the newsgroup llnl.meeting, contact the registrar at registrar@llnl.gov.

NEWS OF NOTE



Focus on health and safety



The Lab's month long Cancer Awareness Campaign kicked off Wednesday with a fair by the Lab pool and picnic area. Above left, Sharon Farmer explained the commemorative quilts on display. Quilt squares are dedicated to individual cancer victims or survivors. The campaign includes a series of events to raise awareness of cancer issues. For more information, check *NewsOnLine* or the June Work/Life Balance calendar from the May 30 edition of *Newsline*.



The annual Safety Fair Thursday outside Bldgs. 551E and 551W drew a big crowd. Safety organizations from across the Laboratory and a few outside guests, such as PG&E participated. Clockwise from center:

Son Nguyen, Gordon Dakin and Richard Cooper examine fire extinguishers displayed at the fair.

Mitchell Cao tests the strength of his grip while physical therapist Ronnie Balan looks on. The display was meant to raise awareness of ergonomic issues.

Gordon Dakin places a fire helmet on Robyn Tirnetta with help from Jason Allen during a demonstration of the gear firefighters are required to wear.

Photos by Jacqueline McBride/Newsline

REVIEW

Continued from page 1

tem of internal controls," said Anne Broome, UC vice president for financial management. "Rather, Ernst and Young did make recommendations for enhancing existing control systems. We appreciate such recommendations from an independent review."

Broome congratulated Livermore's business division employees for their work and cooperation with Ernst & Young LLP, but singled out in particular Anastasio. "Director Anastasio deserves credit for taking

the initiative in asking the University of California to commission an independent look at a number of Livermore's procurement and property management procedures," Broome said.

"In light of the situation at Los Alamos," Anastasio explained, "I felt it was important to get a third party, independent review. I am pleased that their report confirms the existence of key internal controls and appropriate business processes. I want to take this opportunity to thank all Livermore employees who worked closely with Ernst & Young on this project."

The Ernst & Young LLP team conducted the review at Livermore specifically looking at such areas

as procurement business process and application controls; interfaces between procurement and property management and between procurement and accounts payable; property management and property accounting; accounts payable-disbursements and Oracle interfaces and cash receipts controls.

The completion of the Ernst & Young LLP review at Livermore is the second such analysis undertaken by UC. The first, an assessment of Los Alamos business practices, was completed in April 2003.

A copy of the complete E&Y report can be found at <http://www.ucop.edu/news/archives/2003/jun05E&Y.pdf>.



CLASSIFIED ADS

See complete classified ad listings at
<https://www-ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1997 White Pontiac Bonneville. Fully loaded, wood trim, moon roof, new tires & brakes, 26,000 miles. Must see - \$10,000 (510) 276-1135

1997 - Toyota Camry Beautiful irish pearl w/ gold package 95k miles runs like a dream. \$6800 obo 209-544-1207

1985 - Toyota 4runner sr5, 5 speed, tilt gages, registered in n.y., runs good, needs body work. Great for off road. Best offer 925-833-7199

1998 - Ford Escort LX, 4 Door, Dark Green, 4 Cylinder, Automatic Transmission, A/C, AM/FM Stereo, 80K miles, Runs Great! 925-516-7689

1997 - Eldorado in excellent condition. All power, new tires, low miles, Bose sound system, alarm. Just 14,500.00 OBO 510-582-2938

1978 - Chevy 1 ton flat bed new 350ci motor, 4spd, pto set up for dump bed \$3700.00 or best offer. 925-454-1749

1998 - Honda Odyssey LX, 56k miles, good condition, new tires, A/C front & rear, pwr windows/locks, AM/FM cass, 23+mpg. \$10,800. 925-449-8162

1988 - Ford T-bird, silver, 80K miles, good condition, runs great, power everything, \$1500 OBO. 925-875-8005

1989 - Grand Caravan, 1 owner, only 73kmi on new eng/trans, 3.2IV6, AT, AC, PS, cassette, cruise, tint glass. Great Cond. Very reliable. \$1950 925-443-1074

1999 - Dodge Caravan SE, 7-8 passenger, excellent condition. \$6800/BO. Cell (209)564-1118. Home 209-834-8802

1994 - VW Passat, excellent commuter car, strong engine, 5 spd, lots of extras! 124k freeway miles. \$3,800 OBO 510-537-4777

1995 - 1995 Dodge Intrepid, 4-DR, 3.5 V-6, A/C, CC, PS, PW, PDL, Tilt, Anti-lock brakes. Low miles-63480. AM-FM Cassette, tach. 925-828-2304

1990 - Honda Accord Ex. 4-door, AC, CD, Sun Roof, white, 160k mi, good cond. \$2400 obo. 925-447-8557

1993 - NISSAN Sentra, 1 owner, 91k miles, excellent condition, AC, \$2,950 925-513-3215

1993 - Mazda 626 LX - 130,000 miles. Champagne. Runs and looks great. CD, CC, Moon Roof, 5 speed. 28 - 30 mpg. \$2,650 209-833-9141

AUTOMOBILE ACCESSORIES

1962 - VW motor!!! Complete, plus lots more. Let's talk 925-373-7294

235/70 R15 four silver rallys with new tires \$40.00 each. 925-294-8438

13i TIRES. 2 Dunlop 155/80/B13 Nearly new tread only \$25 both. Livermore 925-447-7070

BICYCLES

BMX, Powerlite mini, custom-built, Crupi, Black Widow, Sachs, FSA, extras. Great condition. \$650 925-846-5227

BOATS

1986 Invader, 16 FT Runabout, 3.0 Liter, 4 Cyl., I/O, Open Bow, New Totally Rebuilt Lower Unit. Runs Great! Great on Gas! \$4995 or BO. 209-836-3062

White water kayak, Dagger Vengeance, new. Blue & green swirl, xcel. \$400 925-846-5227

99 Skeeter SX186, must sell, 130 Yamaha very low hours, 2 Lowrance fish finders, ZX55 MotorGuide, loaded, like new. Teal grn. \$13,500/obo. 209-840-0166

ELECTRONIC EQUIPMENT

20 inch color TV w/remote, Mitsubishi, S-Video input, works great, \$35. 925-372-0365

Mac LC-III - good, reliable stand-alone PC w/ lots of software and games. Removable hard disk, CDROM, faxmodem, printer. \$150. 925-443-1074

NINTENDO 64 system w/ controllers and 8 to 10 games. \$90/best offer. 925-373-6751

GIVEAWAY

Emergency spare 16 inch GM, 8 lug wheel and unused tire, excellent for spare on 3/4 ton pickup 925-443-5565

Rock & dirt mixture. Perfect fill for raised planters, or separate out dirt and use rock for landscape. Free, U-haul. 925-449-8863

Full size bed frame with Pecan wood head and foot board. Head board 10 inches deep with storage. 925-372-0365

HOUSEHOLD

Queen sized Mediterranean bedroom set. Triple dresser, mirror, two night stands, chest, headboard. Good condition \$400 BO 925-449-1129

CARDBOARD BOXES, STURDY for moving/storage:: 40 for \$50, 1 wardrobe \$6 925-447-7070

Water bottle dispenser / stand; white base, has internal 3-gal poly tank, holds any size bottle; \$25 aft 6pm please 209-832-2056

Electric Maytag washer and dryer. Excellent condition, white. \$200.00 925-606-9847

Sears rear bag lawnmower. Needs work. \$25 925-372-0365

Mattress and box spring set, twin size, Stearns & Foster/ Bloomingdales super firm, little-used, \$350 or best offer 925-447-6719

French Country Buffet and Hutch. Excellent condition \$125.00 510-538-4881

Glass top kitchen table from Pier 1, 42 inch diameter, black metal base, \$50. 925-463-0151

Gardening Shed, RubberMaid, 92 cubic feet. \$300 new, like new \$100. Dresser, teak, 8 drawers \$60. Wicker table & chair, \$30, G. Forman Grill \$20. 925-736-3954

Bunk bed, royal blue metal frame, twin on top, full on bottom, with mattresses in good condition. \$100.00 925-443-8978

Washer and 2 Dryers. One set apartment size, and one full size dryer. All electric and work great. \$100 each. Will sell separate or together. 925-245-1315

Patio Table, white with glass top, 41 X 71, good cond, \$10. 925-447-2508

Solid Oak Executive Desk with Return \$200/obo. 209-823-5085

Craftsman 12 inch two speed band-saw, leg set w/wheels, approx 9 years old, exc cond. \$210/offer. 209-941-9114

MISCELLANEOUS

Two twin matching headboards and legs \$10.00 each, Two brass end tables glass tops \$5.00 each, other

walnut tables. 925-447-1023

Air compressor, Devilbiss, 60 gallon upright, 220 volt, compressor recently re-sealed, \$200, 209-833-3785

40 foot Shipping Container, aluminum siding not steel, weighs much less than steel siding. Has plywood and lights inside. \$2000.00 obo 925-606-0749

Wedding Set. Center stone round cut .90 carats. Two side stones pear shape, .30 carats each. Paid \$5000, sell \$2,500 obo. 925-858-9628

Four piece American Tourister luggage set. Has keys and locks. Good condition. \$45.00 OBO 510-582-2938

Ford 8N tractor runs good no attachments \$3100.00 925-454-1749

Table saw tilting arbor 8 1/4 inch saw blade and a four inch jointer running off a dual shaft 3/4 hp motor for \$200.00 925-828-0458

2 window mount air conditioners 1 almost new, and 1 rarely used. Both worked perfect in 112 degrees, and still do. \$75 EACH 925-245-1315

Victrola Record Collection, 12 albums, 10 records per. BO 925-447-8557

Spa equipment, 125,000 BTU gas heater, 2 HP pump-strainer, cartridge filter \$200 925-513-8651

Playhouse, Little Tikes, Country Cottage, 2 windows and door, 42x37x46, \$10. 925-447-2508

Scrapbooking and rubber stamping workshops and show using Stampin Up! products. For more information call 925-625-4291

Garage Sale: Saturday, June 7 from 8 a.m. to 4 p.m. at 1936 DeVaca Way, Livermore. Toys, furniture and more.

Fleetwood Mac concert tickets, July 16th at Anaheim Pond Stadium, 8:00PM. Great seats! Asking face value of \$85 each ticket. 925-240-0678

MOTORCYCLES

Bultaco Alpina Projects: Two M-85 frames, forks, swing arms, motors, bodywork plus other parts. \$300. 925-600-1817

1999 - Suzuki TL1000R. Fuel-injected, liquid-cooled, v-twin. 14k miles. \$6200 o.b.o. 925-292-2524

98 - Suzuki TL1000R Only 7500 miles. Never down. Always garaged. Very clean. Excellent condition. Many extras. Wont find another like it. \$7000.00 209-575-2705

PETS & SUPPLIES

17+ hands, 6-yr old quarterhorse, english and western, local shows with junior rider, excellent hunter/jumper prospect with training. \$12,000. 925-447-4345

Free to good home two adult cats one black with white markings the other one grey tabby both females and spayed. please call after 6pm 209-574-0939

Cockatiel cage 26x17x17, \$45 Chin-chilla/Rat cage with wheel 18x21x15, \$25 Hamster/Mouse cage 12x16x12, \$12.00 925-706-2088

Free to good home: ball python and CA kingsnake. Aquariums and all accessories included. 925-240-9841

RECREATION EQUIPMENT

Weight set - inclinable bench press, butterfly, leg curl, leg extension, dumbbells, with 150 lbs. \$20 925-449-3165

Treadmill-Proform 740CS. Distance/laps, timer, pulse/cals calc., speed indicator, much more. Excel-

lent condition/like new \$400.00 925-784-2606

95 Chaparral Sunesta 220 w/trailer; Mag 350, 250hp, V8, P/S, VDO gauges; 5 bladed prop, used less than 300 hrs, asking \$20,000. Excellent cond. 707-584-5322

1976 Winnebago Brave, Dodge 318, 21 FT, Class A, Generator, Headers, Tow Pkg., Sleeps 6, Dual Gas Tanks, Low miles, Runs Great! \$5995 or BO. 209-836-3062

RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www-r.llnl.gov/tsmg>.

Danville - carpool needs 4th driver/rider. Diablo Road area. Work hours 8:15-5:00pm. 925-831-1569, ext. 2-9858

Modesto Mall Park & Ride - Luxury vanpool captain seats, reading lights 8-4:45 ridership-based fares, 209-544-2236, ext. 3-3194

PATTERSON - Vanpool has seats available for M-F 7:30 to 4:00 work schedule. Fare is determined by # of riders. Kim 209-892-2118, ext. 2-9502

ELK GROVE/GALT/LODI - Forming 4-person carpool. 9-80s sched. some flexibility 6:30-4. Assigned days, Friday rotate. 916-686-4554, ext. 3-3901

Cupertino/Surrounding Area - Looking for 1+ people to drive/ride in carpool or vanpool. 9/80 hours are 7:30-5:15 w/some flexibility. ext. 4-4527

Lafayette - LaMOrinda Vanpool (also Walnut Creek stop at Rudgear Rd): reclining seats, reading lights, 7:45-4:45, \$110/mo (pretax reduction available) 925-943-6701, ext. 2-3005

Oakland - Montclair vanpool is seeking new ridership. We are on the 9/80 schedule, arriving at the lab at 7:35am and leaving the lab at 5:30pm. 510-834-6405, ext. 4-5173

Manteca - 4th person needed. Drive every 4th day. Work hours 7:30 to 4:00. 209-823-5593, ext. 3-8539

SERVICES

SUPPORT GROUP for BETTER RELATIONSHIPS! CoDA Codependents Anonymous Meets Tuesday Noon B571/R2127(New Room!) Just come or Info 925-447-7070

It is painting season. Interior, exterior quality painting. Excellent references throughout the bay area. Reasonable prices. Free estimates. 510-537-7222

Piano Tuning--your place or mine. 10% LLNL discount on regular tuning. 925-371-6997

Construction/consultation/inspection services. 209-836-3062

LAMINATE-CARPET-LINOLEUM Licensed/bonded/insured. 28 years experience, reasonable rates. 925-516-9510

SHARED HOUSING

Livermore - furnished room for rent. \$550.00/month share utilities 1/3. Clean/quiet. Deposit. 925-449-1128

TO TRADE

Looking to trade electrical work, for a wood wall unit to be built inside of an existing closet. Cabinet makers, please call 209-836-3062

TRUCKS & TRAILERS

1986 - 350 XL tan & brown diesel dually crew cab, ~112,000 miles, good paint job, fairly new tires, runs well, \$5500. 209-832-3343

1999 - Logan Competitor III B/P 3-horse, slant load trailer with tack room. Great condition \$7850 925-449-6911

Tent Trailer - Starcraft. Large size with 2 double beds, refrigerator, stove and good storage. Older model but in good condition. \$1500/BO. 925-455-0542

1999 - Chevy Suburban super clean. White with Biege interior. 57K miles. Kelly Blue book report at 22,075 but will except reasonable offers. 209-324-7912

1984 - GMC Chevy 3/4 ton long-bed truck. Good condition. 925-447-6410

1994 - Chevy Silverado 4x4, California Concepts, 4 in. lift, extended cab, camper shell, MP3 player, loaded, \$10,500 925-280-5562

1954 - F-100 Runs great v8 auto Too many xtra parts stock and custom to list. needs paint & upholstery. MUST SELL. Lowered price to \$4000/OBO 925-679-1288

1992 - RangerXLT, pwr steer, brakes, air, rear step bumper, tonneau, security sys. auto-6cyl, 4sp. Excel cond. need larger truck. 127,000mi-\$3350. 510-490-5487

1994 - Chevy Silverado 4.3L V6, Lowered, Cust. Wheels, Tonneau Cover, Cust. Exhaust, Tow Package, 115K miles. \$8000 209-824-7396

1987 - Vacationeer 23ft, 8in, Fifth Wheel Trailer. Newer Refrigerator. Good condition. \$4500 or OBO. 925-373-1530

1977 - Chev 1 Ton flat bed, dually, auto. Body excellent cond. New tires. Bed diamond plate. \$3,300.00 209-892-6186

VACATION RENTALS

Lake Tahoe - Timeshare for rent July 4th week located at foot of Heavenly Valley. 4 day min. \$100/day. 925-829-5890

SOUTH LAKE TAHOE - 3 Bedroom 2 bath Chalet, nicely furnished, All amenities, Park w/ Lake, tennis etc. Great for family vacation! Reserve now for summer openings! 209-599-4644

WANTED

Wanted: old truck car or panelwagon for father son build the cheaper the better. i will come and get it just say the word 209-574-0939

Recommendations for a good Volvo repair shop and a Toyota repair shop. In 50 mile or so radius of Lab. 209-835-2416

Your old garage door opener w/remotes for my single car door. 925-961-0153

Soccer Players - Women for adult league in Tracy. 7 vs 7 weeknights at 7:00 PM. We will accept full teams or individual players. Please call 209-836-0577

Looking for a wheelbarrow in any condition. 925-240-0678

Looking for storage in livermore for my Motor home at reasonable price\$ 925-447-0558

Services and merchandise listed in Newsline are not guaranteed. It is up to the buyer to scrutinize services purchased.

SCIENCE NEWS



Laboratory researcher hot on trail of solar mystery

By Anne M. Stark

NEWSLINE STAFF WRITER

For years, scientists have been puzzled by the question, “Why is the corona, the uppermost layer of the solar atmosphere, 300 times hotter than the solar surface of 6000 degrees and what could transfer the energy from the relatively cool surface of the Sun to the upper layers of atmosphere and turn them hot?”

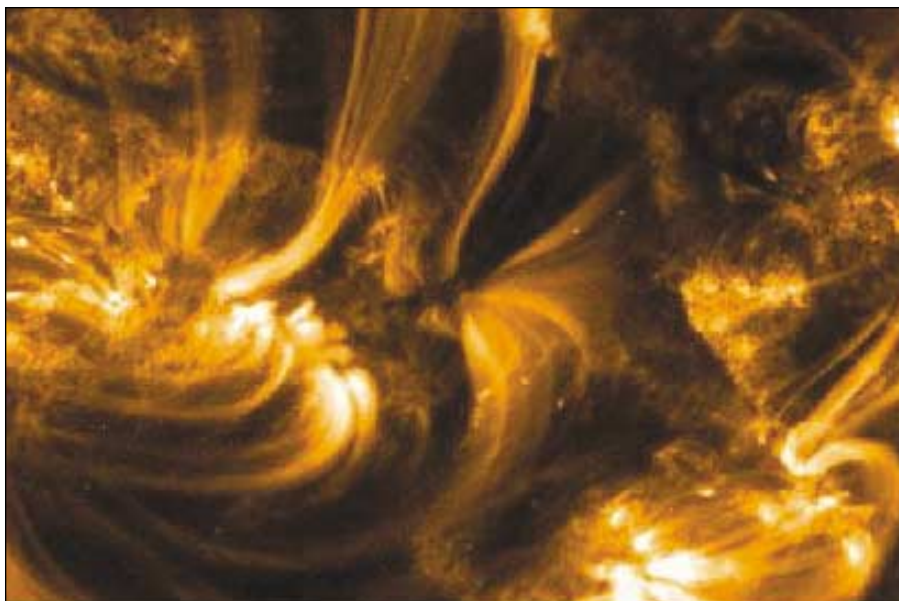
The sharpest temperature jump occurs within a narrow “transition region” at the bottom of the corona that is about 300 kilometers thick and is the site of the most mysterious sporadic action — micro-flares, explosive events and hot supersonic plasma jets.

But for the first time, Lab physicist Margarita Ryutova, in conjunction with Theodore Tarbell, a researcher from Stanford-Lockheed Martin Solar & Astrophysics Laboratories of Palo Alto, have unlocked the key to why and how the sharp temperature jump occurs and what makes the solar transition region so erratic by studying the largest makeup of the Sun's surface.

Through observations using several instruments on the Solar and Heliospheric Observatory (SOHO) and Transition Region and Coronal Explorer (TRACE), the researchers discovered that the collision of magnetic fields of small-scale flux tubes in the photosphere (the section of atmosphere closest to the Sun's surface) causes a series of regular actions that start from the magnetic flux reduction, pass through shock formation and appear in the transition region as micro-flares, plasma jets and explosive events.

Furthermore, Ryutova, who also is a consultant at Stanford-Lockheed, was the first to observe a shock-shock collision in the solar atmosphere.

“These are unprecedented observations,” Ryutova said. “For the first time, we were able to see these shocks in action. When shocks collide, the



TRANSITION REGION AND CORONAL EXPLORER (TRACE)

A snapshot of a million degree corona. The field of view is about 1/10,000 of the visible surface of the Sun.

energy of a system is first squeezed into a very small volume and then gets violently released.”

The event is similar to the shaped charges found in modern-day high explosives. A shaped charge, by design, focuses all of its energy on a single line, making it very accurate and powerful. In the same way, colliding shock fronts produce dramatic effects in the form of micro-flares and plasma jets in the solar transition region.

“The most remarkable observation is that nature creates plenty of shaped charges because the solar atmosphere above the ‘quiet sun’ surface is filled by an avalanche of shock waves,” Ryutova said.

The “quiet sun,” (which makes up 90 percent of the solar surface), is unlike regions with large-scale magnetic sunspots (which make up about 10 percent of the Sun's surface). The “quiet sun” is made of small-scale magnetic flux tubes with opposite negative and positive polarities — making them look similar to salt and pepper.

Buffeted by the surface convective motions,

flux tubes move around and merge, reconnecting magnetic field lines and acquiring strongly curved forms. In these curved field lines, magnetic tension is very strong and acts like a rubber sling shot and, in turn, generates shock waves. Those that propagate upward accelerate through the Sun's rarefied atmosphere into the transition region where they collide and release the cumulative jets and micro-flares.

In the astrophysics realm, unlike the shaped charge technology where the conical angle must be specific, angles between the converging shock fronts may vary. It is this “freedom of angles” that explains the variety of the transition region phenomena, Ryutova said.

If, for example, shocks experience a head-on collision, the entire energy goes into the strong local heating resulting in a micro-flare. If shock fronts intersect at some angle, energy

is distributed between the jets and micro-flares. Finally, among thousands of colliding shocks there are those which form a “right cone” and expel strong collimated jets.

“It is just this great variety of combinations that we see,” Ryutova said. “Thus, the observed complexity that made the most stubborn puzzle for years, turned out to be a natural consequence of a simple fundamental process.”

The findings provide insight not only into the origin of the solar transition region, but also into how energy production, transfer and release may occur throughout the Sun's and stellar atmospheres. This may help explain the energy output in other cosmic objects that have magnetic fields and gravitation.

Results of these studies, “MHD Shocks and the Origin of the Solar Transition Region,” are presented in the May 15 edition of Physical Review Letters. To view the full paper, go to <http://prl.aps.org>.

SEISMIC

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ration.

Last month, Rodgers and Lab technician Pat Lewis traveled to the UAE to install the stations in cooperation with UAE University. It is a joint project between UAE University's Department of Geology and the Laboratory's Earth Sciences Division. As part of the project, the UAE University Department of Geology set up a laboratory to analyze data collected through the seismic stations.

Two sites for seismic stations were selected near Al Hail and Al Ain for their remoteness and rock geology. This equipment records tiny ground motions, including small earthquakes and explosions in the UAE and large distant earthquakes.

The Livermore Laboratory-installed seismic stations are part of a “virtual seismic network” throughout the Middle East, according to Rodgers.

“The Persian Gulf is a good place to collect some important seismic data, because little or no data has been recorded there,” he said. “Data from these stations will be used to learn about



J. PATRICK LEWIS, LLNL

LLNL seismologist Arthur Rodgers, center, describes the operation of a recently deployed seismic station near Fujairah, United Arab Emirates.

earthquakes and earth structure in and around the UAE.”

Rodgers said the Zagros Mountains in Iran, which sit just across the Persian Gulf from UAE are very active seismic centers, while the Semail Ophiolites, a range of mountains that

span Oman and the UAE, are relatively aseismic.

“The Zagros Mountains are a region in the Middle East where the African and Eurasian tectonic plates have collided,” said Nakanishi, deputy division leader for Earth Sciences in the Energy and Environment Directorate.

“These two seismic stations are welcomed by the UAE government,” Nakanishi said. “They will help the country characterize earthquake ground motions and hazards, so they know where to build earthquake-resistant structures.”

“The new seismic stations will be used to learn where small earthquakes occur and help define seismically active faults. This information will help our Emirati colleagues know where to expect and be better prepared for possible future earthquakes,” Rodgers said.

Rodgers and Nakanishi plan to expand their efforts to other Middle Eastern countries in the future, so that eventually a network of seismic monitors will be installed throughout the region to monitor earthquake activity.

HOMELAND SECURITY

Continued from page 1

way Hotel. The conference ended Thursday.

In the wake of the Sept. 11 terrorist attacks, the national labs moved quickly and the federal government “instinctively” looked to the laboratories, Burns said to the conference attendees.

“Homeland security is an enduring mission. Many national laboratories have understood that and have stepped up to the plate.”

Burns cited several of the proposed principles that are envisioned to guide the Office of National Laboratories and the national labs that work on homeland security. They include:

- In the short term, homeland security work at the labs will be conducted in accordance with the memorandum of understanding signed in February by Department of Homeland Security Secretary Tom Ridge and Department of Energy Secretary Spencer Abraham.
- The regional relationships that the national labs have with state and local homeland security entities, the private sector and academic institutions are a valued and important component.
- Intellectual competition is strongly encouraged; institutional rivalry is strongly discouraged.
- In general, the national laboratories will not be permitted to compete for Homeland Security Advanced Research Projects Agency (HSARPA) funding. HSARPA is an agency within the Department of Homeland Security.

About \$350 million — out of some \$803 million proposed for fiscal year 2004 spending by the department’s Science and Technology office — would fund private industry and university work through HSARPA.

A roughly similar amount is proposed to be spent at the Department of Defense, Department of Energy

and other federal laboratories, Burns said.

Another proposed item of spending for FY 2004 is \$22 million to develop technologies to counter “emerging threats.” This work, Burns said, will be longer term and high risk.

The office headed by Burns, the Office of National Laboratories, was explicitly established in the Homeland Security Act of 2002. Its aim is to leverage the full capabilities of all DOE labs for homeland security work.

After Burns’ talk, a seven-member panel comprised of Burns and representatives from six national labs discussed technology transfer issues and homeland security.

Craig Reed of the Secretary of Energy’s Advisory Board moderated the discussion. At the outset, he identified three phases of technology transfer at the DOE laboratories.

In the early 1990s first phase, dubbed “opportunistic,” companies attempted to “cherry-pick” the laboratories’ technologies. During the second phase, called “standardization,” the labs responded to industry criticisms of the difficulty of moving technology into the private sector. The most recent phase is one of collaboration in which the companies and labs both bring resources to the table and share the benefits.

Early on, Reed asked the panel members how money should be divided up for the national labs. “Competition should be for ideas, not for funding,” said T.J. Allard, the homeland security manager for Sandia National Laboratory. “The best thing is for the three labs to appear as one.”

Stephen Lake, the manager of business development for Argonne National Laboratory, said he



Mike Burns

believes it is good that the three weapons labs have teamed. The other labs, he said, now need to be brought into the process.

Panel members were also asked by Reed to speculate on what the relationship between the national labs and the Homeland Security Department might look like in five years.

It is important, said LLNL’s Betsy Cantwell, manager of external relations for the Homeland Security Organization, to guard the mechanisms that allow innovation, creativity and technology transfer to work.

“We also have to protect the mechanisms for individual researchers to interact with other researchers,”

she said.

Michael Kuliasha, director for homeland security at Oak Ridge National Laboratory, said the labs can be “regional portals” to the complex for others, such as local governments.

On the conference’s opening day, Norma Dunipace and Kathy Kaufman of LLNL’s Industrial Partnerships and Commercialization (IPAC) Office, gave a presentation on licensing practices in a political environment. Dunipace is IPAC’s manager for Partnership Development, while Kaufman is its manager for Partnership Management.

In an interview after his talk, Burns noted: “There’s a lot of intention to do a good job. We have a lot of smart people really wanting to respond. Science and technology is an ace in the hole this country has that really nobody else possesses... We’re going to play that ace in the hole, and it is part of the (department’s) job to make that happen.”

NIF

Continued from page 1

strated excellent management and technical performance under very demanding circumstances. NIF continues surpassing expectations and is now breaking world records. It is well on its way to becoming one of the jewels of NNSA and the nuclear weapons complex,” said Linton Brooks, administrator of the National Nuclear Security Administration (NNSA).

NIF Associate Director George Miller agreed, saying, “We have met or exceeded all current required milestones in the baseline established three years ago. We have now demonstrated on a per-beam basis the critical performance criteria of NIF. These accomplishments show that NIF is ready to fulfill the promise of its vital role in maintaining the viability of U.S. nuclear deterrent through the Stockpile Stewardship Program.”

NIF’s football stadium-sized building will house 192 laser beams delivering ultraviolet laser light to millimeter-sized targets. The tremendous

energy available in NIF can be used to produce conditions of extreme temperature and pressure, similar to those that occur in stars and in exploding nuclear weapons.

NIF will also be used to achieve inertial confinement fusion ignition with energy gain, which will provide researchers with a better understanding of the processes that occur in nuclear weapons and will provide valuable data for future fusion energy power production.

When fully activated, NIF will provide 50 times more energy than any other laser system and will be a cornerstone of the NNSA’s Stockpile Stewardship Program.

In the process of achieving this current milestone the NIF research team has met or exceeded a number of critical performance criteria including:

- Demonstration of 0.2 to 25 nanosecond shaped pulses.
- Less than five hours between shots (providing capability for more than 700 laser shots per year).
- Better than required beam uniformity.
- Beam relative timing to 6 picoseconds (tril-

lionths of a second).

The achievement of this milestone and demonstration of NIF performance criteria continue a string of successes that have taken place in the past six months. The successful completion of this activity required the efforts of hundreds of workers in disciplines ranging from construction to precision optics. In the process all of the major systems required to demonstrate the operation of NIF were installed, activated and commissioned to NIF specifications.

In the coming year, NIF project personnel will use these first laser beams to characterize NIF’s performance and begin basic and applied science experiments. Experiments are planned on NIF starting this year and will continue while the project is completed. Experimental capabilities will grow as additional laser beams are activated, culminating in the completion of all 192 laser beams in 2008.

DIRECTOR’S OFFICE

Continued from page 1

importantly it is how we react to them. This means that whenever possible, you should directly and immediately fix the problem and mitigate its impacts and equally important, communicate the situation to your supervisor. Your supervisor may be aware of other ramifications of the problem or connectivity to other issues. Your supervisor can help. If you become aware of a problem not in your area of responsibility, communicate to those who are responsible — don’t assume it is already being handled. It is easy for stovepipes to develop that can miss important broad perspectives or institutional views. It is also easy to miss problems right in front of us that have become all too familiar.

As an update, Security has put in place com-

pensatory measures and is working on a longer-term action plan to improve our processes. I expect our internal management review — led by AD’s George Miller, Steve Hunt and Jan Tulk to conclude soon. The DOE/NNSA team that arrived on Monday to assess the management of security operations has returned to headquarters and will be reporting out today to NNSA Administrator Linton Brooks. The DOE Inspector General’s office began an investigation this week. I want to thank everyone for their hard work in response to this crisis.

We now have the opportunity to demonstrate to DOE, NNSA, UC, Congress and the general public that we deserve their confidence and are up to the challenge of effectively managing this lab. It’s a challenge that requires our “commitment to the collective success of the laboratory.” It is a challenge we can meet.



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